

What is claimed is:

1. A method for regenerating a particulate filter, which is mounted in an exhaust gas channel of an internal combustion engine, filters  
5 particles out of exhaust gas flowing inside of the exhaust gas channel and is intermittently regenerated during operation, comprising:
  - measuring actual air mass flow supplied to the internal combustion engine;
  - 10 determining an air requirement of the internal combustion engine to be expected at a current operating point; and
  - regeneration of the particulate filter initiated based on a difference between the air mass flow and the air requirement.
- 15 2. The method according to Claim 1, wherein the regeneration is triggered if a difference of the actual air mass flow from the calculated air requirement exceeds a predetermined threshold value.
3. The method according to Claim 1, wherein the air requirement is  
20 determined taking an empty or cleaned particulate filter as starting point.
4. A method for regenerating a particulate filter, which is mounted in an exhaust gas channel of an internal combustion engine,  
25 filters particles out of exhaust gas flowing inside of the exhaust gas channel and is intermittently regenerated during operation, comprising:
  - measuring actual air mass flow supplied to the internal combustion engine;
  - 30 adapting a model for determining an air requirement to be expected at a current operating point to the actual air mass flow; and
  - regeneration of the particulate filter is initiated if the model lies outside a predetermined parameter ranges after the  
35 adaptation.
5. The method according to Claim 4, wherein the model is adapted

to the actual air mass flow, whereby at least one adjustment value is suitably set and a regeneration is triggered if the adjustment value is outside the predetermined ranges.

- 5    6.    The method according to Claim 4, wherein the determination of the air requirement, other variables influencing the air requirement than accumulation of particles in the particulate filter are taken into consideration.
- 10   7.    The method according to Claim 4, wherein the determination of the air requirement and a decision as to whether a regeneration is triggered occur at discrete operating points of the internal combustion engine.
- 15   8.    The method according to Claim 4, wherein the air requirement is calculated for control of the internal combustion engine, whereby a partly loaded filter is taken as a starting point.
- 20   9.    The method according to Claim 4, wherein the actual air mass flow supplied to the internal combustion engine is determined by an air mass measuring device mounted in an intake tract of the internal combustion engine, or by a pressure sensor mounted in the intake tract of the internal combustion engine.